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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PHAN, TRI H	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/608,747	VIJEH ET AL.	
	Examiner	Art Unit	
	Tri H. Phan	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-11,13-18,20-25 and 27-30* is/are pending in the application.

4a) Of the above claim(s) *2,12,19 and 26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1,3-11,13-18,20-25 and 27-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/18-19/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on September 19th, 2005. Claims 2, 12, 19 and 26 are now canceled. Claims 1, 3-11, 13-18, 20-25 and 27-30 are now pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-6, 10-11, 13-16, 18, 20-25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lahat et al.** (U.S.6,233,074) in view of **Chin et al.** (U.S.6,314,110).

- In regard to claims 1 and 18, **Lahat** discloses, *a metropolitan area packet ring* (figures 5, 7-8), *comprising a fiber optic loop* ('fibre optical ring network'; for example see Fig. 5; col. 8, lines 21-43) *carrying asynchronous data packets* ('ATM'; col. 4, lines 7-9) *flow in a single direction through the fiber optic loop* (see fig. 5, with the direction of λ2); *a plurality of*

metropolitan packet switches coupled to the fiber optic loop (switches in figs. 7-8), *wherein a metropolitan packet switch is comprised of an I/O port* (ingress/egress of the switch in figs. 7-8) *coupled to the fiber optic loop which inserts packets of data onto the fiber optic loop and which pulls packets of data off the fiber optic loop* (wherein the data signal is added/dropped through the optical add drop module 'OADM' at the switch); *a processor* ('controller 134' in fig. 6) *coupled to the I/O port* (fig. 6 where the 'ingress/egress' and 'drop/add ports' are couple to the controller 134 and where "downstream" is just the direction of the flows from ingress to egress) *which separately regulates data packets transmitted over the fiber optic loop on a per-flow basis* (For example see col. 10, lines 11-13, 52-54; wherein each enabled/disabled channel of the optical receiver on the fiber is being added/dropped and controlled/assigned to different wavelengths by the controller as disclosed in col. 5, line 66 through col. 6, line 13, col. 9, line 33 through col. 10, line 58; e.g. "*transmitted ... on a per-flow basis*"). **Lahat** does disclose, wherein data signal at the optical signal input and output is controlled by the controller for each user with different channels or wavelengths, e.g. "*in maintaining the per-flow basis*", in controlling the demand of the bandwidth as disclosed in figs. 6-8; col. 8, lines 58-61; col. 11, lines 44-47; and from overload as disclosed in col. 2, lines 6-23; but **Lahat** fails to explicitly disclose what **Chin** teaches about the "*quality of service*" in maintaining the per-flow basis and about "*the allocated bandwidth according to the pre-determined weighting scheme*".

Chin discloses in Figs. 1-5 and in the respective portions of the specification about the system and method for distributing a fair allocated bandwidth for the bi-directional ring network with spatial and local reuse method (For example see col. 5, lines 40-47; col. 7, lines 31-45; wherein each directional ring can be considered as a "*single direction*" as disclosed in Fig. 1;

Abstract); each node in the ring checks and regulates the amount of its own traffic according to its allocated usage ("*separately regulating transmitted data over the fiber optic loop*"; For example see col. 3, line 55 through col. 4, line 9; Fig. 4; col. 10, line 55 through col. 11, line 16) with the packet's priority ("*quality of service*"; wherein the high and low priority traffic are provided with the bandwidth allocation scheme, which 'requires certain amount of consistently available bandwidth for high priority traffic' as disclosed in col. 2, lines 54-62). **Chin** further discloses about the bandwidth allocation scheme for different priority traffic ("*the allocated bandwidth according to the pre-determined weighting scheme*"; For example see Col. 2, Lines 54-67) through the use of management scheme ("*ring management system*"; For example see Col. 3, Line 14-34).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chin**, by implementing the bandwidth allocation scheme with guaranteed quality of service in **Lahat**'s bandwidth control system, with the motivation being to improve the ability to transfer data with the fair allocated bandwidth as disclose in **Chin**: col. 3, line 55-67, while keeping consistently available bandwidth for high priority traffic as disclose in **Chin**: col. 2, line 54-62.

- Regarding claim 3, 13, 20-21 and 28-29, **Lahat** does disclose about the bandwidth control via the method of adding/dropping data signal for unicast and multicast connections ("set of subscribers"; For example see Col. 6, Line 45 through Col. 7, Line 8), but fails to disclose about the method for decreasing "*data rate due to the congestion*". However, such implementation is known in the art.

For example, **Chin** further discloses that each node in the ring checks and regulates the amount of its own traffic according to its allocated usage with the packet's priority ("*maintain the subscriber's minimum assigned bandwidth*"; wherein the high and low priority traffic are provided with the bandwidth allocation scheme disclosed in Col. 2, Lines 54-67; , which 'requires certain amount of consistently available bandwidth for high priority traffic', e.g. "*maintain quality of service*", as disclosed in col. 2, lines 54-62); wherein, due to the congestion, decreasing the allocated bandwidth, i.e. "*data rate*", toward the minimum available bandwidth at the node through the use of management scheme ("*decreasing or adjusting data rate to the minimum bandwidth due to the congestion*"; For example see Col. 3, Lines 14-54; Col. 5, Lines 40-47).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chin**, by implementing the bandwidth allocation management scheme with decreasing bandwidth in **Lahat**'s bandwidth control system with the motivation being to improve the ability to transfer data with the guaranteed quality of service.

- In regard to claims 4, 10, 15-16, 22 and 30, **Lahat** further discloses that the bandwidth is provided for a plurality of optical channels with different wavelengths ("*available bandwidth is allocated amongst a plurality of flows*"; For example see Col. 8, Lines 55-61); wherein the additional wavelengths are added for users demands ("*allocated bandwidth on a per-flow basis*"; For example see Col. 11, Lines 38-47). **Lahat** does discloses that the data rates in the Ethernet network are in the range from OC-3 to OC 12 on the optical fiber, but fails to specifically

disclose about the "*10 gigabit Ethernet*". However, Ethernet 802.3 or OC-192 is well known in the art for transferring data at the rate of "*10 gigabit Ethernet*".

Therefore, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to use the Ethernet 802.3 or OC-192 for transferring data at the rate of "*10 gigabit Ethernet*" in the **Lahat**'s system.

- Regarding claims 5-6, 14, 23-24 and 27, **Lahat** further fails to disclose about "*the allocated bandwidth according to the pre-determined weighting scheme*" in the fibre optical ring network ("*fiber optical loop*"). However, such implementation is known in the art.

For example, **Chin** further discloses about the bandwidth allocation scheme for different priority traffic ("*the allocated bandwidth according to the pre-determined weighting scheme*"; For example see Col. 2, Lines 54-67) through the use of management scheme ("*ring management system*"; For example see Col. 3, Line 14-34).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chin**, by implementing the bandwidth allocation management scheme in **Lahat**'s bandwidth control system with the motivation being to improve the ability to transfer data with the guaranteed quality of service.

- In regard to claims 11 and 25, **Lahat** discloses, *a plurality of switching devices through which a plurality of devices are coupled to the metropolitan area packet ring* (see figures 5, 7-8), *a method for managing packetized traffic flowing asynchronously* in a single direction through the metropolitan area packet ring (see fig. 5; 'ATM'; col. 4, lines 7-9) *to maintain a particular*

quality of service for a subscriber, comprising the steps of assigning the particular quality of service to the subscriber; and controlling said asynchronous data packets being transmitted over the metropolitan area packet ring on a per-flow basis (for example see figs. 6-8; col. 2, lines 49-61; wherein each user is assigned for a dedicated bandwidth, e.g. "*initial bandwidth*", in order to control the demand of the bandwidth of blocking or from overloading, e.g. "*congestion*", as disclosed in col. 2, lines 6-23; col. 8, lines 58-61; or for "*allocated newly available bandwidth to be used by the subscribers*" as disclosed in col. 11, lines 44-47; and wherein, through the use of the optical add drop module 'OADM' under the control of the controller at the switch, each enabled/disabled channel of the optical receiver on the fiber is being added/dropped and controlled/assigned to different wavelengths by the controller as disclosed in col. 5, line 66 through col. 6, line 13, col. 9, line 33 through col. 10, line 58; e.g. "*controlling ... on a per-flow basis*"). However, **Lahat** lacks what **Chin** teaches about *quality of service* and *providing the minimum bandwidth due to the congestion.*

Chin discloses in Figs. 1-5 and in the respective portions of the specification about the system and method for distributing a fair allocated bandwidth for the bi-directional ring network with spatial and local reuse method (For example see Col. 5, Lines 40-47; Col. 7, Lines 31-45); wherein each node in the ring checks and regulates the amount of its own traffic according to its allocated usage ("*assigning and controlling transmitted data over the fiber optic loop*"; For example see Fig. 4; Col. 10, Line 55 through Col. 11, Line 16) with the packet's priority ("*quality of service is provided*"; wherein the high and low priority traffic are provided with the bandwidth allocation scheme, which 'requires certain amount of consistently available bandwidth for high priority traffic' as disclosed in col. 2, lines 54-62); wherein, due to the

congestion, decreasing the allocated bandwidth toward the minimum available bandwidth at the node through the use of management scheme ("*providing the minimum bandwidth due to the congestion*"; For example see Col. 3, Lines 14-54).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chin**, by implementing the bandwidth allocation scheme with guaranteed quality of service in **Lahat**'s bandwidth control system, with the motivation being to improve the ability to transfer data with the fair allocated bandwidth as disclose in **Chin**: col. 3, line 55-67, while keeping consistently available bandwidth for high priority traffic as disclose in **Chin**: col. 2, line 54-62.

4. Claims 7-9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lahat et al.** (U.S.6,233,074) in view of **Chin et al.** (U.S.6,314,110) as applied to part 7 of this Office action above, and further in view of **Graves et al.** (U.S.6,229,788).

- In regard to claims 7-9 and 17, the combination of **Lahat** and **Chin**'s system discloses all the subject matter of the claimed invention as discussed in part 7 above of this Office action, including the method for allocating bandwidth to nodes in the ring network, i.e. Ethernet network, with the bandwidth allocation scheme for different priority traffic for data, voice or video (For example see **Chin**: Col. 2, Lines 54-67) through the use of management scheme with minimum bandwidth and delay via the use of spatial and local reuse method (For example see **Chin**: Col. 3, Line 14 through Col. 4, Line 9); but fails to specifically disclose about the rate

shaping for the "*constant and variable bit rate*" in the QoS. However, such implementation is known in the art.

For example, **Graves** discloses in Figs. 3-4 and in the respective portions of the specification about the system and method for traffic shaping in the broadband fiber-based access system; wherein the constant bit rate 'CBR' ("*constant bit rate*"; For example see Col. 1, Lines 26-65) and unspecified bit rate 'UBR' ("*variable bit rate*"; For example see Col. 1, Lines 26-65) are controlled by the traffic shapers disclosed in Col. 12, Line 5 through Col. 11, Line 11 ("*rate shaping*"; For example see Col. 10, Lines 24-29).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to use the invention as taught by **Graves,** which implements the traffic shaper in the management scheme of **Lahat** and **Chin**'s system, with the motivation being to control the flow of different classes of traffic such as BC, CBR, UBR, in the broadband fiber-based access system.

Response to Arguments

5. Applicant's arguments filed on September 19th, 2005 have been fully considered but they are not persuasive.

Applicant mainly argues that the combination of **Lahat** and **Chin** does not disclose the "*QoS is maintained on said per-flow basis*". Examiner respectfully disagrees. **Lahat** discloses about the fibre optical ring network, where the connections between switches with different protocols such as Ethernet, ATM, FDDI, etc. flow in a single direction, e.g. "*data flows in the*

single direction through the fiber optical loop", as disclosed in fig. 5; and wherein, in figure 6, each enabled/disabled channel of the optical receiver on the fiber is being added/dropped by the optical add drop module 'OADM' as disclosed in col. 5, line 66 through col. 6, line 13; and controlled/assigned to different wavelengths by the controller 134, e.g. "*processor*", as disclosed in col. 10, lines 11-13, 52-54; to add/drop optical channels on the capacity of the fiber, with each channel comprise a different wavelength, based on the user demand as disclosed in Abstract, col. 11, lines 44-47. **Chin** discloses in Figs. 1-5 and in the respective portions of the specification about the system and method for distributing a fair allocated bandwidth for the bi-directional ring network with spatial and local reuse method (For example see Col. 5, Lines 40-47; Col. 7, Lines 31-45); wherein each node in the ring checks and regulates the amount of its own traffic according to its allocated usage ("*assigning and controlling transmitted data over the fiber optic loop*"; For example see Fig. 4; Col. 10, Line 55 through Col. 11, Line 16) with the packet's priority ("*quality of service*"; wherein the high and low priority traffic are provided with the bandwidth allocation scheme, which 'requires certain amount of consistently available bandwidth for high priority traffic' as disclosed in col. 2, lines 54-62); wherein, due to the congestion, decreasing the allocated bandwidth toward the minimum available bandwidth at the node through the use of management scheme ("*providing the minimum bandwidth due to the congestion*"; For example see Col. 3, Lines 14-54). Therefore, Examiner concludes that the combination of **Lahat** and **Chin** teaches the arguable features.

Claims 3-10, 13-17, 20-24, and 27-30 are rejected as in Parts 3 and 4 above of this Office action and by virtue of their dependence from claims 1, 11, 18 and 25.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BRIAN NGUYEN
PRIMARY EXAMINER

Tri H. Phan
December 13, 2005